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Theory in Developing a Personality
Inventory

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Price $1.00

Psychological Monographs:
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The Use of Rotter's Social Learning Theory in Developing a Personality Inventory[1,2]

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THIS RESEARCH represents an effort to design and validate a psychometric measure of a theoretical construct derived from a formalized theory of behavior. The model provided by Rotter's (14) Social Learning Theory of Personality (SLT) has been employed in this project.

Several authors (1, 4, 8, 17) have argued for a more "rational approach" in the design of personality tests; but, as Butler points out:

> ". . . the writer knows of no personality inventory for which the content, the form of items and the psychometric methods applied have been dictated by a formal psychological model" (1, p. 77).

A survey of the literature supports Butler's contention by indicating that the great majority of attempts to improve test construction has been devoted to developing more adequate mathematical models for psychological tests which adhere to the tenets of physical measurement. Whereas such efforts are essential, even the most refined mathematical model is not a sufficient means of devising adequate measuring instruments for personality constructs. It is clear that the mathematical model alone cannot yield test items, but can only provide mathematical procedures to justify their final inclusion in a test. In addition to the difficulties involved in constructing appropriate items, another major source of potential failure in devising a useful measuring instrument may be the nature of the construct being measured. Some psychological constructs are more useful tools for explaining behavior than others. For example, the construct of intelligence is considered superior in this respect to that of honesty. Test construction based primarily on a mathematical model does not provide any means of establishing the value of the construct being measured until after the test has been validated. If the test emerges as a valid and useful instrument, the construct was probably a good one. However, if the test proves invalid, then either the construct may have been poor or the instrument was inappropriately designed to measure this construct. Which factor is operating cannot be readily determined.

To a large extent, the selection of con-

structs and items has depended upon the implicit preferences of the personality test constructor. The use of an explicit methodology concerning their selection may prove to be a more fruitful approach to objective test construction. Behavior theories provide a more explicit and controlled means of selection of both the constructs to be measured and the items used in measuring them. An adequate mathematical model coordinated with a meaningful psychological theory may prove to be both the necessary and sufficient conditions for the development of satisfactory personality inventories.

The use of behavior theory in test construction can be of great potential benefit to both theory and test building. The construction of instruments to measure theoretical constructs should enable more adequate verification or refutation of hypotheses deduced from the system and thus lead to a more valid and powerful conceptualization of the theory. This in turn should provide a means of constructing measures of greater validity. It is the continuation of this cycle which may eventually provide a greater understanding of any set of behaviors taken under consideration.

One aim of this study is to provide empirical justification for the behavior theory approach to test construction. The other is to develop an instrument which can be used by subsequent investigators interested in further development of the theory from which the test was derived. It is the accomplishment of the latter aim which provides crucial support for the value of the behavior theory approach to test construction. The value of this approach can be considered partially demonstrated when it fulfills these essential conditions: the items used to formulate the measuring instrument should be selected in a manner proposed by the theory; the test should be psychometrically sound and measure an explicitly stated theoretical construct; and, lastly, the test should be useful in testing experimental hypotheses deduced from this same theory.

Social Learning Theory

There are several reasons for the selection of SLT for test construction purposes. Rotter has placed a great deal of emphasis on the possible interrelationship of four classes of variables. These include the subject's measurable behavior, his expectations that his behavior will be followed by particular kinds of events or reinforcements, the value of these external events or reinforcements, and the psychological situation in which behavior takes place. Knowledge of the interplay of these classes of variables has indispensable guiding value for the personality test constructor. Perhaps most important is the fact that the constructs are given operational definition, which allows the selection of clearly specified behavioral referents so necessary for the valid measurement of psychological variables. Aspects of the theory relevant to the present problem will be considered briefly in the following section.

In SLT, *need* is the abstraction from learned behaviors which have common directionality. It is hypothesized that various behaviors become functionally related (lead to the same or equivalent goals) through a process of learning and generalization. In this system goals are functionally related if they evoke the same or similar behaviors, and behaviors which lead to the same or similar goals form a functional class. This viewpoint of Rotter's has resulted in a working categorization of learned behaviors into

six major needs: recognition-status, protection-dependency, dominance, independence, love and affection, and physical comfort.

Each of these need categories represents what Peak (13) refers to as a functional unity. To say that behaviors are functionally related or organized means, in this case, that they change concomitantly. An event which affects one of the behaviors in the unit or class will affect all other behaviors in that unit in a predictable manner. In other words the behaviors within a functional class are correlated. The notion of concomitant variation based on functional relationships allows the prediction of occurrence of behavior X as a result of measuring or observing the class of functionally related behaviors (need) to which X belongs.

The construct "need" describes a person's tendency to behave in a given fashion in certain situations. The mean potentiality of a group of functionally related behaviors occurring in any situation is what is meant by strength of need, or, to use Rotter's term, "need potential." Strength of need depends upon the interaction of the variables *freedom of movement* and *need value*. The mean expectancy (subjective probability) that an individual has of obtaining positive reinforcement as a result of employing a class of functionally related behaviors constituting a particular need is known as the freedom of movement for that need. The mean preference value for the reinforcements expected by employing a class of functionally related behaviors is what is meant by need value. To arrive at an estimate of the strength of a need, some type of measurement of freedom of movement and need value is necessary. Consequently, the construc-

tion of reliable and valid measures to serve as indicants of freedom of movement and need value is a necessary step in estimating the predictive value of these constructs and, thus, their explanatory validity.

The construct "need value," because it is hypothesized to be less subject to immediate environmental influence than freedom of movement, is more amenable to psychometric measurement at the present stage of the theory's development. Need value pertains to the preference for one set of reinforcements over another when expectancy of attaining either set is held constant. The mean preference value of a set of functionally related reinforcements relative to other sets is what is meant by need value.

As is obvious from the role of this construct in Rotter's theory, actual behavior cannot be predicted from a measure of need value alone. It is, however, one of the major variables which must be accounted for in predicting behavior from this theoretical framework. The interaction of other classes of variables with each other and with need value must be known or controlled to allow for actual behavioral prediction. This point seems to have been neglected frequently in the interpretation of other measuring instruments.

The basic situation for the measurement of need value is simply this: Present a subject with two or more sets of functionally related behaviors (i.e., the members of each set have been demonstrated by some empirical means to lead to the same or similar goals for that subject). Require the subject to make statements of preference or choice between two behaviors from each set, paired in every possible combination, with the stated provision that he has equal oppor-

tunity for engaging in either (thereby controlling expectancy). The number of items picked in one set as most preferable represents an indication of need value for that series of behaviors (need) as compared to the set or sets with which it was contrasted.

This operational definition of need value makes some type of choice or ranking technique mandatory for developing an indicant of this construct. On the basis of this, and of certain psychometric considerations derived from previous research (3, 9), a forced choice technique was constructed to measure need value.

By theoretical definition, the measurement of need value requires that expectancy be held constant. The control of expectancy was attempted via the use of instructions. Each choice is presented to the subject with the instructions: "Select the one you most prefer to do if you had an *equal* opportunity to do either one." The effectiveness of such instructions for controlling expectancy has not been tested and may be considered, therefore, a weakness of the design.

Not only did Rotter's theory dictate the form of the item but the content as well. The content of the items designed to measure a particular need value is determined by sampling a population of behaviors constituting a given need category. Since the measurement of a particular need value is relative to other known sets of behaviors, at least two need categories must be sampled.

The breadth of Rotter's classification scheme provides a great variety of behaviors about which predictions can be made but, consequently, lowers the accuracy of prediction regarding any specific event. The level of generality at which these needs are abstracted transcends all situations. Throughout his theory, Rotter emphasizes the importance of the psychological situation as a determiner of behavior. Lowering the level of generality of these needs by subcategorizing them in terms of specific situations should significantly increase accuracy of prediction. This reasoning resulted in selecting items which fitted four situationally qualified need categories.

Rotter cautions that a need category based on functionally related behaviors must be determined empirically and that the classification or organization of behaviors into psychological needs must be considered characteristic only of the particular culture in which the classification is made. Behaviors which bring love, recognition, or comfort in one culture are not necessarily those which bring the same reinforcements in another culture.

The latter two statements suggest that clues to some functional relationships are given by the culture itself. Judges familiar with the college culture were asked to list behaviors which they thought individuals in a college population use to satisfy the four need categories under consideration. Those behaviors having high interjudge agreement were used to make up the test items.

It is realized that cultural determination of need categories does not take into account the individual deviations of the members of that culture. Any individuals employing behaviors different from those of the majority of people in their cultural group in an attempt to attain the same goals will not be taken into account by a measure constructed in this manner. Such individual deviations will constitute error variance of a systematic nature in this type of scale. However, to arrive at a definitive appraisal of any

one individual's need hierarchy requires elaborate measurement techniques which, as Rotter suggests:

". . . are neither economical nor feasible for the study of groups or in collection of group data in order to test theoretical hypotheses. For these latter purposes the method . . . using cultural referents would appear to be adequate" (14, p. 186).

Operationally, there is a significantly higher correlation in the way in which people react to behavioral referents within a need than between needs. The effectiveness of the judgmental method for establishing functional unities or needs on a cultural basis was tested by means of an item analysis and a factor analysis.

TEST CONSTRUCTION

Category Selection

The operations involved in developing a need category provide a basis for grouping behavioral items into scorable categories. The names of the needs and their definitions are listed below:

1. Recognition-Status in Academic Situations (AcR): Need to be considered competent or good in academic situations. The need to have your academic behaviors approved and admired by others. Need to gain academic status.

2. Recognition-Status in Social Situations (SoR): Need to be considered competent or good in social activities. The need to have your social behaviors approved and admired by others. The need to gain social status.

3. Love and Affection in Academic Situations (ALA): Need for acceptance and indications of liking by your classmates in academic situations. Need to be valued as a friend in academic situations.

4. Love and Affection in Social Situations (SLA): Need for acceptance and indications of liking by other individuals in a social atmosphere. Need to feel the

sheer joy of being with others regardless of any advantage to yourself. Need to feel part of a social group, i.e., to be valued as a friend in social activities.

These needs were selected for the following reasons:

1. The behaviors subsumed under each need are familiar, through personal experience and daily contact, to the author and to the judges used in this study.

2. The behaviors subsumed under each need are likely to differentiate students in terms of frequency of use. If most members of the population employ the referent behaviors to approximately the same extent, these behaviors will not be useful for constructing test items designed to differentiate subjects in terms of strength of need.

3. These needs refer to classes of behavior which often seem to come into conflict in the college setting. The selection of a behavior subsumed under one need often is incompatible with engaging in a behavior subsumed under another need. An attempt was made to approach a more representative sample of behavioral choices by making the test choices as "lifelike" as possible. In the case of many items this criterion could not be met because it came into conflict with other criteria used to pair the behaviors, namely, social desirability and item intercorrelation.

4. In the selection of the four needs an attempt was made to reach a suitable compromise between breadth and exactitude of prediction. The two major need areas, recognition and love and affection, were subdivided in terms of situations likely to be encountered by college students.

Behavior Selection

A dittoed pamphlet consisting of a

brief orientation to Rotter's conceptualization of needs, the four needs followed by their logical definitions, and six illustrative behavioral referents was constructed by the author. These pamphlets were distributed to faculty members and graduate students in the Department of Psychology at the University of Colorado. They were instructed to list 10 or more behaviors which they thought the majority of college students use to satisfy each need.

The submitted behaviors were sorted to prevent duplication and edited for clarity of expression. They were then pooled and judged by four judges (including the author) as to their relevance as referents for each need. This was accomplished by means of an item sort. Each judge was presented all the behavioral referents transcribed on 3-by-5 cards and asked to sort them into four piles corresponding to the four needs. The judges were instructed to separate out those behaviors which seemed to overlap more than one category or for any other reason did not seem well suited to any one of the four needs. Only those behaviors which at least three out of the four judges agreed upon were considered in the construction of the items. The probability that three out of four judges will select the same referent to fit the same need strictly on the basis of chance is 1 in 64. This means that out of the 239 submitted behavioral referents only four would be likely to be selected by chance alone.

Preliminary Scale Construction

Each item in the scale is formed by pairing a behavioral referent from one need category with a behavioral referent from another need category. A crude attempt to control social desirability was made by pairing referents which had approximately equivalent social acceptance value in terms of the author's judgments.

Combining referents from each need category with referents for each of the other three needs resulted in the construction of six subtests, each one including 20 items. The subtests and the contrasting need categories are listed below:

Subtest	Needs
I.	AcR vs. SoR
II.	AcR vs. ALA
III.	AcR vs. SLA
IV.	SoR vs. ALA
V.	SoR vs. SLA
VI.	ALA vs. SLA

Scoring

The total score in any one of the six subtests is the sum of the alternatives, within a need category, which are selected by the subjects. Six scoring keys, one for each subtest, were designed to enable a count of the number of alternatives checked in the first-named need of each subtest. For example, a score of 15 on subtest I (AcR vs. SoR) means that the individual has selected 15 alternatives referring to academic recognition and 5 referring to social recognition. The same scheme is followed in determining a score for each of the other five subtests.

The score on one need category within a subtest is, of course, the complement of the score on the need with which it is contrasted. To say that a subject has a score of 15 on subtest I means that he has a score of 15 on the need for academic recognition and a score of 5 on social recognition, provided he has answered all the questions. The scores between subtests, however, are mechanically independent. The format of the test in no way makes the score on one subtest de-

pendent on the scores made on any of the other subtests.

The higher the score on a particular need category, the more often the subject has chosen the statements for this need as being more preferable activities than the statements for the contrasting need. The lower the score, the less often the subject has chosen them as being more preferable. By definition, then, the total score on any subtest is an indicator of strength of need value in terms of frequency of choice for one need relative to another need. In this form of the inventory no attempt was made to combine subtest scores.

The trial form was pretested on 22 students in an introductory psychology class. There were no difficulties connected with the instructions and the form proved to be a very convenient one to administer and score. It requires about 25 minutes for the average college student to complete the test, and almost all college students will finish by the end of 50 minutes.

The Development of the Second Form

As a test of the adequacy of the preliminary form and to provide a basis for building a new form, scores on each of the six subtests were obtained from 125 students (70 males and 55 females) in another introductory psychology class. For the theoretical and psychometric reasons discussed in the previous chapter, the kind of items wanted in this test were those which intercorrelated within a subtest and which are relatively immune to being answered on socially desirable grounds.

An item analysis served as a check on our judgments in selecting related items to compose the need categories. A biserial r was computed for each item to find the relationship between each item and the total subtest score. Each item was dichotomized in terms of the alternatives a or b and correlated with the total subtest score. In essence this is a rough device used in the initial stages as an aid in establishing the existence of functional unities within our test. Any item which did not demonstrate a degree of correlation with the total subtest score at or greater than the 5% level of confidence was considered invalid.

An estimate of social desirability was obtained for each item by calculating the proportion of subjects selecting alternative a as compared to those selecting alternative b in the case of each item. If more than 80% of the sample taking the trial form selected either alternative, then that item was judged as being responded to in terms of a social desirability factor.

Any item which did not meet both criteria, i.e., demonstrating a significant correlation with the total subtest score and having neither alternative selected by more than 80% of the subjects was discarded. Forty-four out of the original 120 were scrapped or reassembled on this basis. Of the remaining 76 items, 12 more had to be recombined to enable the use of the same 20 behavioral referents for each of the four needs. The remaining 64 items formed a nucleus around which a new form of the test was built.

In the pairing of different need alternatives to make up new items, a further attempt to control social desirability was made. The "social desirability value" of each alternative was obtained by counting the number of times it was selected in each of its pairings in the preliminary form (ranging from one to three) and computing the mean. Referents from each need were paired with referents

from each of the other three needs for approximate equality of social desirability as defined by this kind of frequency count.

The finding of Gordon (10) and Edwards (5) that there is a high positive relationship between independently obtained social desirability indices and frequency of choice lends some justification to the use of this method for controlling social desirability. However, the method used in this study must be considered inadequate because, for one thing, the estimate of social desirability is based on the number of times an alternative is selected after it is put in a forced-choice item to which the subjects are instructed to respond on a need value basis. Consequently, it is very likely that the social desirability factor and the variable being measured are contaminating each other and there is no way of accurately determining the influence of either one separately. The superiority of Edwards' (6) scaling method for controlling social desirability is unquestioned, but the amount of time and effort required prevented its use in the present study.

In order to permit totaling of subtest scores, the *same* 20 behavior statements from each need were paired with the *same* 20 behavior statements from each of the other three needs. The format and instructions of the second inventory are the same as that of the trial form. The same six subtests are composed of 20 forced-choice pairs each, which makes a total of 120 items. For ease in scoring, the items on the inventory are grouped in blocks of six. Each block has one item from each subtest arranged in consecutive order.

Scoring Combinations

The subtests are scored by the same method as described for the trial form. The repeated use of the 20 referents from each category provides the rationale for combining subtest scores in various ways. The scores used in this study are listed below:

Subtest	Need Categories	Range of Scores
I	AcR vs. SoR	0–20
II	AcR vs. ALA	0–20
III	AcR vs. SLA	0–20
IV	SoR vs. ALA	0–20
V	SoR vs. SLA	0–20
VI	ALA vs. SLA	0–20

Combination of Subtest Scores Yielding Situational Need Scores

	Range of Scores
Subtest I + subtest II + subtest III = Need for Academic Recognition	0–60
*Complement of Score of Subtest I + Score of Subtest IV + Score of Subtest V = Need for Social Recognition	0–60
Complement of Score of Subtest II + Complement of Score of Subtest IV + Score of Subtest VI = Need for Academic Love and Affection	0–60
Complement of Score of Subtest III + Complement of Score of Subtest V + Complement of Score of Subtest VI = Need for Social Love and Affection	0–60

Over-All Need Scores

Score on Subtest II + III + IV + V = Need for Recognition
Complementary Scores on II + III + IV + V = Need for Love and Affection
Range of both Need Scores is 0–80

The scoring arrangements presented above represent three levels of abstrac-

* Formula for obtaining complementary scores: 20 − Subtest Score = Complementary Score
Example: 20 − Score on Subtest I (AcR Score) = SoR Score

tion, each one more inclusive than the preceding one. The scoring method to be used in describing a person's need values depends on the breadth and/or exactitude of prediction desired. The utility of various scoring combinations for predicting specific behaviors will determine the preference accorded them.

The second form of the test was administered to a different group of subjects from a course in general psychology ($N = 148$). Once again, a biserial r was computed for each item to determine its relationship with the total subtest score. Another frequency count of the proportion of subjects answering either alternative of each item was made. The results of these two procedures led to the decision that this form of the inventory was satisfactory for further investigative procedures. Only eight (items 14, 111, 58, 12, 30, 60, 84, 108) were not significant at the 5% level of confidence and five of these, the last numbered, are in subtest VI. In 10 cases (items 32, 44, 46, 111, 28, 41, 30, 102, 108, 114) more than 80% of the subjects selected either alternative. The procedures to be discussed in the following chapters are based on this form of inventory, named the Goal Preference Inventory (GPI), which is presented in its entirety in the Appendix.

EVALUATION OF THE GPI[3]

Norms

The norms available at the present time are for unmarried, undergraduate students at the University of Colorado who at the time of testing were enrolled

in introductory psychology classes. The normative sample consists of 233 women and 157 men ranging in age from 18 to 32 years. This population (composed largely of sophomores) is the group ordinarily used for research purposes by psychologists at the university. All subjects in the normative group were told that they were taking this test for research purposes.

Distributions of scores on the subtests were made separately for men and women to determine the presence of sex differences. The means and standard deviations for each of the subtest scores and for each of the scoring combinations are presented in Table 1. Critical ratios were computed to test the significance of difference between the mean score of men and the mean score of women in each scoring category.

The raw score distributions for both men and women appear to form essentially normal curves in the case of each scoring category. What constitutes a high or low score on any distribution is best determined by each user of the test in terms of his own objectives. The means and standard deviations shown in Table 1 provide a convenient basis for converting raw scores into standard scores for the individuals in the normative sample. Although it was not done in this study, the subtest scores can be converted into standard scores and then summed to arrive at the need scores.

Internal Consistency

The test was constructed with the aim of having the items within each subtest measure the same attribute or variable. The computation of split-half reliability coefficients for each of the subtests indicates how well we have approached this goal. Odd-even scores were correlated for

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[3] This evaluation has been heavily influenced by the "construct validity" approach described by Cronbach and Meehl (4). The present project (i.e., the use of theory in test construction) is viewed as a logical extension of their point of view.

TABLE 1

MEANS[a] AND STANDARD DEVIATIONS OF THE RAW SCORE DISTRIBUTIONS FOR THE NORMATIVE SAMPLE

Variable	Means			Standard Deviations		
	Men	Women	Total	Men	Women	Total
Subtest I	10.84**	10.04	10.37	3.82	3.49	3.64
II	11.03**	10.23	10.55	3.30	2.85	3.06
III	9.97*	7.87	8.72	3.48	3.13	3.44
IV	10.19	10.20	10.20	3.73	3.28	3.47
V	9.28*	8.16	8.61	3.83	3.53	3.69
VI	9.25*	8.02	8.52	2.32	2.26	2.36
AcR	31.71*	28.14	29.58	8.07	7.35	7.85
SoR	28.76	28.34	28.51	9.85	8.58	9.12
ALA	28.05	27.64	27.80	5.97	5.21	5.54
SLA	31.48	35.98*	34.17	7.00	6.69	7.16
Over-all Rec.	40.55*	36.50	38.13	10.82	9.60	10.30
Over-all L & A	39.45	43.50*	41.87	10.82	9.60	10.30
N	157	233	390			

[a] The mean is significantly larger than the corresponding mean for the opposite sex.
* Significant at the .01 level.
** Significant at the .05 level.

each subtest over the 148 subjects in class one. The internal consistency coefficients, corrected by the Spearman-Brown formula, are given in Table 2.

As shown in Table 2, the range of coefficients is from 0.51 to 0.79 with the mean being 0.66. Taking into consideration the relative shortness of each subtest these coefficients indicate a reason-

ably high degree of internal consistency for the first five subtests. For example, they compare favorably with the internal consistency coefficients obtained by Edwards (7) with the Personal Preference Schedule which range from .60 to .87 with a mean of .76.

Stability

Stability coefficients are based upon a group of 62 students who took the test twice with a five-day interval separating the two administrations. These coefficients and the corresponding standard errors of measurement are given in Table 3.

In general, the results indicate a battery of subtests, excluding subtest VI, which is reliable for general predictive purposes, particularly when scoring combinations are used. The range is from .56 to .92 with a mean of .82. The size of the standard errors of measurement indicates that the absolute errors of measurement of the obtained scores are relatively small.

TABLE 2

COEFFICIENTS OF INTERNAL CONSISTENCY FOR THE SIX SUBTEST SCORES

Subtests	Internal Consistency[a]	Mean[b]	SD
I	.73	10.41	3.78
II	.63	10.73	3.30
III	.62	9.12	3.55
IV	.70	10.27	3.71
V	.79	9.10	4.41
VI	.51	8.58	2.73
N	148		

[a] Split-half is based on odd against even items within each subtest corrected by the Spearman-Brown formula.
[b] The means and standard deviations for each variable are based on the total raw scores for the 148 subjects.

As in the case of internal consistency, subtest VI yields a considerably lower stability coefficient than any of the other scoring categories. It is probable that all the scoring combinations incorporating subtest VI have lower stability coefficients as a consequence of the low reliability of subtest VI.

The relatively lower split-half and test-retest reliability coefficients of subtest VI (ALA vs. SLA) may indicate that the majority of subjects does not find it meaningful to choose between academic and social love and affection statements. As a result of the ambiguity involved in forcing such a choice, there may be a lack of response consistency within subtest VI at a given time and fluctuations in preference over a period of time. The following factor analysis tends to support this conclusion.

Factorial Validity

By the nature of its construction, the present test purports to measure four factors, i.e., the four need categories labeled AcR, SoR, ALA, and SLA. In an attempt to find the number and kinds of factors being measured by this test, the six subtests were intercorrelated and the resulting matrix was factor analyzed. The factor analysis in this case is used as an estimate of response consistencies. It is

another test of the hypothesis that people will react to behavioral referent statements *within* a need category in a more similar fashion than they will to behavioral referent statements *between* need categories, i.e., factor analysis furnishes further evidence for the existence, or lack of existence, of functional unities.

Thurstone's (16) centroid method was used to factor analyze the subtest intercorrelation matrix shown in Table 4. This method enabled the extraction of

TABLE 3

COEFFICIENTS OF STABILITY[a] AND STANDARD ERRORS OF MEASUREMENT FOR ALL SCORING CATEGORIES

Scoring Categories	Stability			
	r	Mean	SD	SE
Subtest I	.00	10.74	4.32	1.38
II	.77	10.48	3.20	1.58
III	.86	8.44	3.81	1.45
IV	.86	9.58	3.74	1.42
V	.80	8.00	3.74	1.68
VI	.56	8.39	2.20	1.45
AcR	.91	20.66	9.26	2.78
SoR	.92	20.81	10.47	2.93
ALA	.80	28.32	5.81	2.61
SLA	.78	35.24	6.50	3.06
Over-all Rec.	.86	36.52	10.13	3.85
Over-all L & A	.86	43.48	10.13	3.85
N	62			

[a] Test-retest with a five-day interval. Means and standard deviations are for first testing.

TABLE 4

INTERCORRELATIONS OF THE SUBTEST SCORES

Subtest[a] (N = 148)	II AcR vs. ALA	III AcR vs. SLA	IV SoR vs. ALA	V SoR vs. SLA	VI ALA vs. SLA
I. AcR vs. SoR	.25	.28	−.60	−.43	.14
II. AcR vs. ALA		.63	.29	.37	.025
III. AcR vs. SLA			.26	.48	.41
IV. SoR vs. ALA				.72	−.073
V. SoR vs. SLA					.22
VI. ALA vs. SLA					

[a] Means and standard deviations for each subtest appear in Table 2.

TABLE 5

CENTROID-FACTOR MATRIX

Subtest	Factor Loadings			
	I	II	III	Communalities
I	−.30	.78	.10	.66
II	.50	.42	.45	.64
III	.68	.64	.00	.81
IV	.80	−.47	.25	.93
V	.89	−.14	−.17	.82
VI	.23	.32	−.39	.33

the three factors shown in Table 5. The third factor residuals were so small (largest coefficient was 0.05) that it was clear that there was nothing left but error variance. Orthogonal rotation of the reference axes provided the final rotated matrix shown in Table 6.

An examination of the factor structure shown in Table 6 reveals the presence of three factors. There are three subtests which have substantial loadings in common in each factor in contrast with the three other subtests that have zero or low factor loadings in each of the three factors. The common feature of the highly factor-loaded group of tests that is not shared by the other tests is used to define or interpret each of the three factors.

Tests I (AcR vs. SoR), IV (SoR vs. ALA) and V (SoR vs. SLA) have high loadings on Factor A. The high negative factor loading for subtest I means that

TABLE 6

ROTATED ORTHOGONAL FACTOR MATRIX

Subtests	Factors		
	A	B	C
I	−.68	.12	.47
II	.21	.02	.76
III	.17	.55	.73
IV	.95	−.07	.15
V	.78	.45	.18
VI	−.04	.54	.10

this test correlated positively with subtests IV and V in terms of the social recognition score, which it will be remembered is the complement of the academic recognition score on subtest I. The common feature of these three subtests, then, is social recognition, and Factor A is identifiable as a social recognition factor.

Factor B appears to be a social love and affection factor. It is defined by subtests III, V, and VI, whose common feature is social love and affection.

Factor C is defined by subtests I, II, and III, whose common feature is academic recognition.

Thus, the three factors which emerge can be identified as constituting three of the need categories used in constructing this test. The emergence of these three factors tends to support, among other things, the method of item selection via judges' item sorts. The factorial results also increase our confidence in the use of cultural cues as a means of grouping functionally related behaviors into relatively independent need categories.

The factor analysis further indicates that within the normative group the academic love and affection statements do not reflect a functional unity and when paired with social love and affection statements serve to lower the internal consistency and reliability of the scale. Consequently, the inventory could be improved by eliminating the academic love and affection category or substituting a more meaningful category.

The discovery of the lack of existence of an academic love and affection factor re-emphasized the importance of taking into account the meaning of the situation for the individual or class of individuals being studied. The academic love and affection factor was put into the test in

order to arrive at a symmetrical inventory, that is to say, as a balance for social love and affection in the manner that academic recognition balances social recognition. It proved the most difficult category for which to get referents, and some members of the original referent providing group claimed that academic love and affection does not exist. The need was established by psychology graduate students and staff, who probably perceive the classroom situation somewhat differently than undergraduate students. Whereas the test constructors may consider it meaningful and important to engage in classroom behaviors which lead toward a goal of love and affection, a large number of people in the tested group probably did not. It would seem advisable in future projects of this nature to have the behavioral referents for various need categories selected by a group which is representative of the population to be studied. The representativeness of the judges becomes especially important when attempting to establish tenuous or not widely accepted need categories such as academic love and affection.

Known Groups

It was emphasized in the previous chapter that a measure of need value does not alone enable accurate prediction of a given individual's behavior. Other factors have to be taken into account, a major one being expectancy. However, if these other factors are allowed to vary at random within groups, a coarse correspondence should be found between certain need value scores and designated group differences. For example, knowledge of the ways of life of two groups of people may lead us to expect that one group would have a higher need value for certain goals than the other group. If our expectation is verified in terms of differential test scores, then both the construct and the test are validated to a certain degree.

In no case of known group validity used in this study is the differentiating group variable the direct criterion of need value, for the test is meant to measure something other than fraternity affiliation, etc. Only a *low* degree of correspondence is expected between test scores and designated groups because, as the result of the operation of numerous uncontrolled variables, members of the groups should overlap on the test. An obvious example is that of a Negro who has a high need value for social recognition but a low expectancy of being pledged by a fraternity.

"Greeks" vs. "Independents." Observation of fraternity and sorority life led to the hypothesis that the mean social recognition score of fraternity and sorority affiliated students will be significantly higher than the mean social recognition score of independent students. Validation groups consisted of 55 fraternity and 119 sorority members who were compared with 84 male and 88 female independents respectively.

All subjects were enrolled in two introductory classes and are comparable in terms of age, marital status (all single), and class standing. Critical ratios, means, and sigmas are shown in Table 7.

In the case of both men and women the hypothesis is supported, i.e., significant differences occur in the predicted direction.

Sex differences. The normative findings involving sex differences shown in Table 1 constitute part of the validity data for the test. In each case, the direction of the difference makes psychologi-

TABLE 7

DIFFERENCES IN MEAN SOCIAL RECOGNITION SCORES BETWEEN "GREEK" AND "INDEPENDENT" STUDENTS

Group	M	SD	N	CR
Sorority Women	29.50	8.89	119	
Independent Women	26.35	8.68	88	2.54**
Fraternity Men	31.25	9.29	55	
Independent Men	25.43	7.92	84	3.80*

* Significant at greater than the .01 level.
** Significant between the .01 and .05 level.

cal sense. On a cultural basis it seems apparent that college women in general would tend to have higher need values than men for social love and affection goals. It could also be argued that as a result of cultural training the goals associated with academic recognition would have greater reinforcement values for men than for women. The direction of sex differences is construed as supporting the construct validity of the test since it is consistent with the general cultural expectations.

Grades. Another validity measure, which can be considered as being within the known group area, was obtained by correlating grade point averages with academic recognition scores over 77 males and 64 females. The Pearson product moment correlation coefficients, the means, and sigmas are presented in Table 8.

The low positive relationship found for males supports the notion that all other things being equal, people with higher academic recognition need values will make higher grades. The failure of the females to support the hypothesis suggests a limitation in our understanding of the construct need value. As also indicated by the sex differences in the normative data, women as a group tend to respond differently to this test than do men. The problem of sex differences was not, and should have been, taken into account in the construction of the test and in selecting methods to evaluate the adequacy of the inventory. Consideration of sex differences would seem required of both theoretical formulations and techniques of measurement involving culturally derived personality constructs.

Relationships with Edwards' Personal Preference Schedule (PPS)

The final approach to validity reported in this chapter involves the investigation of the relationships between certain scores on our scale with specified PPS (7) scores. Edwards' PPS is a relatively reliable forced-choice inventory purporting to measure 15 independent personality variables. A major attribute of Edwards' test is the rigorous control of

TABLE 8

PEARSON PRODUCT MOMENT r's BETWEEN ACADEMIC RECOGNITION SCORES AND GRADE POINT AVERAGES

Group	Grade Point		Academic Recognition			
	M	SD	M	SD	N	r
Women	2.16	.64	28.30	7.22	64	.00
Men	2.00	.74	32.05	8.12	77	.35**

** Significant at the .05 level.

TABLE 9

PEARSON PRODUCT MOMENT r's BETWEEN RECOGNITION (GPI) AND ACHIEVEMENT (PPS)

Group	GPI Recognition		PPS Achievement		N	r
	M	SD	M	SD		
Women	36.53	10.10	12.84	3.93	68	.42*
Men	38.00	10.30	16.15	4.37	27	.43**

* Significant at greater than the .01 level.
** Significant between the .01 and .05 level.

the social desirability factor.

The PPS provides measures on two variables, achievement and nurturance, whose definitions make them comparable to the recognition-status and love and affection variables respectively as defined by Rotter.

The similarity between these definitions leads to a predicted correlation between recognition-status as measured by the test of goal preferences and achievement as measured by the PPS, depending on the adequacy of PPS items in relation to the definition. By the same token, a correlation is predicted between love and affection and nurturance as measured by these two scales respectively.

Ninety-five students had taken the PPS in connection with another study some weeks before the GPI was administered. As shown in Tables 9 and 10 the hypothesized relationships are found for both sexes in the predicted direction.

In general, the results obtained thus far support the notion that within the tested population the GPI is a reasonably reliable and valid indicator of relative strength of need value for three of the four needs incorporated in this inventory. In analyzing the results the following suggestions were made concerning possibilities for improving this instrument: (a) elimination of the academic love and affection statements, (b) use of a more representative sample of judges to select the behavioral referents, (c) better control of social desirability, and (d) more intensive investigation of the area of sex differences.

Suggestions for Further Study

Major advances in the development of this kind of test depend upon increased understanding of the nature of the constructs being measured. The use of such an instrument in psychological research

TABLE 10

PEARSON PRODUCT MOMENT r's BETWEEN LOVE AND AFFECTION (GPI) AND NURTURANCE (PPS)

Group	GPI Love and Affection		PPS Nurturance		N	r
	M	SD	M	SD		
Women	43.50	10.00	17.06	4.60	68	.47*
Men	42.37	10.00	14.41	5.04	27	.35**

* Significant at greater than the .01 level.
** Significant between the .01 and .05 level.

provides a means for gaining the knowledge necessary to improve the test by improving the theory underlying it. From the many research problems which could be undertaken involving the use of the Goal Preferences Inventory, a number are listed below which seem of immediate importance.

1. Inspection of the scoring profiles suggests that there are three major patterns of response to the items. First, there is a group of individuals who seem to be *need dominated*, i.e., they tend to pick all recognition items or all love and affection statements regardless of the situational context. The opposite is a much smaller group who appear to be *situation dominated*, i.e., they tend to choose all social or all academic statements regardless of the need context. The largest group appears to be composed of those who react to the items in terms of the *need-situation*. They tend to pick love and affection items in social situations and recognition items in academic situations. Factor analytic techniques which evaluate the similarity between test profiles could be employed to determine whether or not the groupings suggested above exist.

2. If groups could be differentiated in terms of the stable response patterns mentioned above, then further personality differences among these groups could be investigated. For example, it may be that the need and/or situation dominated groups are more maladjusted in college than the need-situation group. A study in progress at the University of Colorado is testing this hypothesis by investigating the relationships between scores on Rotter's (15) Incomplete Sentence Blank (a semiprojective measure of maladjustment) and scoring patterns on the GPI.

3. A prominent issue in psychology is the question of the relationships between so-called unconscious aspects of motivation and needs which subjects verbalize. A comparison of indirect measures of motivational strength, devised by McClelland (12) and his associates, with certain scores on the Goal Preference Inventory may yield some fruitful insights into this problem.

4. The assumption concerning the use of the inventory as a means of validating the theory can be tested by selecting subjects on the basis of inventory scores to participate in an experimental test of hypotheses deduced from SLT. A pilot study[4] was conducted to test the hypothesis that if two groups are frustrated on a particular task, the group having greater need value (i.e., higher scores on the GPI) for the goals associated with success on that task would react more strongly to frustration than the group having lesser need values.

In spite of the small number of subjects and the exploratory nature of the design, this study does provide substantially more information regarding the role of need value in the reinforcement process as formulated by SLT than previous studies (2, 11) not using the GPI as

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[4] Since the primary purpose of this publication is to discuss the construction and evaluation of the GPI, only a brief abstract of one research effort done with the GPI is presented to indicate its usefulness in this respect. A full account of the study may be obtained by writing the author.

It may be worth while to emphasize that the results of this study do not validate or invalidate the GPI in the traditional sense of the term. Insofar as the test is a reliable indicator of subject variation in response to test items, it stands as a psychological measure of some variable. Research of this kind helps us better understand what and how useful that variable is. This approach, in a sense, is the essence of construct validity described by Cronbach and Meehl (4).

a selection instrument. Also important is the finding that this study indicates certain limitations in the GPI as a measure of need value, especially in the case of women. This kind of research, then, can be a basis for improving our indicators as well as testing hypotheses.

SUMMARY

The present study is based upon two related assumptions: (*a*) that the use of a formal behavior theory can be a powerful aid in developing a personality inventory, and (*b*) that a test developed in this manner can aid in bringing about a more valid and powerful conceptualization of the theory.

Demonstration of the fruitfulness of the behavior theory approach to test construction requires the building of a valid and useful measuring instrument based upon a formal psychological model. Rotter's Social Learning Theory (SLT) provided the constructs to be measured, the content and form of the items, and indicated some of the psychometric methods.

The personality inventory resulting from this study is built on the forced-choice procedure, i.e., each item consists of a pair of behavioral referents from which the subject chooses one. The two referents which are paired in any item always represent two different need categories, so each item enables a choice of need referents by a subject. This is the paradigm for the test and the model for measuring need value when expectancy is controlled. The only control of expectancy in this inventory is by way of instructions.

The inventory (named the Goal Preference Inventory, GPI) is designed to measure the relative need value of recognition vs. love and affection. It does this by employing four subneeds: Recognition in Academic Situations (AcR), Recognition in Social Situations (SoR), Love and Affection in Academic Situations (ALA), Love and Affection in Social Situations (SLA).

Judges familiar with the college culture were asked to list behaviors they thought undergraduate students use to satisfy the four need categories. Those behaviors having high interjudge agreement were used to make up the test items. There are 20 different referents for each subneed. When the four subneeds are paired against each other (the 20 referents of one subneed against the 20 referents of another), they yield six subscales of the test, each subscale containing 20 items.

An item analysis was used to produce fairly homogeneous subtests and only those items which appeared relatively immune to being answered on socially desirable grounds were retained. The normative sample consists of 233 women and 157 men, all unmarried, undergraduate students at the University of Colorado. Split-half and test-retest methods indicate that all scales with the exception of subtest VI (ALA vs. SLA) demonstrate sufficient internal consistency and stability to warrant their use as indicators of specific psychological variables, presumably strength of need values.

A factor analysis shows three relatively independent factors corresponding to three need categories. The nonemergence of an academic love and affection factor taken in conjunction with other evidence suggests that the need for academic love and affection as defined by the GPI is not appropriate for the tested population.

Known group methods and correla-

tions with scores on Edwards' Personal Preference Schedule were used to investigate the relationships between the constructs of the inventory and external variables which should hypothetically be related to the inventory variables in specified ways. In general, the results support the notion that within the tested population the GPI is a reliable and valid indicator of strength of need value for three of the four needs incorporated in the inventory.

On the basis of the results it seems plausible to conclude that the GPI can be useful in psychological research. The limits of its usefulness will be determined by the diversity of experimental studies employing it.

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THE GOAL PREFERENCE INVENTORY

This is a test to find out which kinds of activities different people prefer in certain situations while attending college. Each item consists of a pair of alternatives lettered *a* or *b*. Please choose the one activity of each pair *(and only one)* which you most prefer to do, if there is an *equal* opportunity to do either one. Be sure to select the one you actually *would* choose rather than the one you think you should choose if you had to make a choice. This is a measure of preference; there are no right or wrong answers.

DIRECTIONS

Your answers to the items on this test are to be recorded on a separate answer sheet which is loosely inserted in the booklet. REMOVE THIS ANSWER SHEET NOW. Print your name on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items *carefully* but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black in the space under the letter which you choose as the activity most preferred.

Many times you will find that the *same* activities are paired in *different* combinations throughout the test.

Example: One item may read: I most prefer to:

a) attempt to persuade a group to my political point of view.

b) withdraw from the argument maintaining my own private point of view.

Whereas another item may read: I most prefer to:

a) attempt to persuade a group to my political point of view.

b) take a group of children to a movie.

Be sure to judge every item independently when making your choice. Avoid the tendency to automatically repeat the previous choice on a new item.

In some instances you also may discover that you very much like to do both things or prefer to do neither. In such cases, be sure to select the *one* you'd most rather do; the activity which is most important to you.

ANSWER SHEET*

Scoring Key: Alternative marked X refers to behavior referent for first-named need category of each subtest.

Item No.	a	b	Item No.	a	b	Item No.	a	b	Item No.	a	b	Item No.	a	b	Item No.	a	b
1.		X	21.		X	41.		X	61.		X	81.		X	101.		X
2.	X		22.		X	42.	X		62.		X	82.		X	102.	X	
3.	X		23.	X	X	43.		X	63.	X		83.	X		103.		X
4.	X		24.		X	44.	X		64.	X		84.		X	104.	X	
5.		X	25.	X		45.	X		65.	X		85.		X	105.		X
6.	X		26.	X		46.	X		66.		X	86.	X		106.	X	
7.		X	27.		X	47.	X		67.		X	87.	X		107.	X	
8.	X		28.	X		48.	X		68.	X		88.	X		108.		X
9.	X		29.	X		49.	X		69.	X		89.	X		109.	X	
10.	X		30.		X	50.	X		70.		X	90.		X	110.	X	
11.	X		31.	X		51.		X	71.	X		91.	X		111.	X	
12.	X		32.	X		52.	X		72.	X		92.	X		112.		X
13.	X		33.		X	53.		X	73.	X		93.		X	113.		X
14.	X		34.	X		54.	X		74.	X		94.		X	114.	X	
15.		X	35.	X		55.		X	75.	X		95.		X	115.		X
16.	X		36.		X	56.		X	76.		X	96.		X	116.	X	
17.		X	37.		X	57.	X		77.		X	97.	X		117.		X
18.		X	38.		X	58.	X		78.	X		98.	X		118.		X
19.		X	39.		X	59.	X		79.		X	99.		X	119.	X	
20.	X		40.		X	60.		X	80.	X		100.	X		120.	X	

* For testing purposes standard IBM answer sheets were used. The items are grouped in blocks of six and each block has one item from each subtest arranged in consecutive order.

Select the alternative which you most prefer to do, if there is an *equal* opportunity to do either one.

I most prefer to:

1. a) try to get into plays, on radio, etc.
   b) volunteer for oral reports in the classroom.
2. a) be praised by the teacher for my ability in class.
   b) be praised by the students for assisting them with academic problems.
3. a) take a course where the instructor teaches on a very high level.
   b) be patient with and tolerant of a friend's more objectionable characteristics.
4. a) try to get into plays, on radio, etc.
   b) sympathize with those who receive low grades.
5. a) go out of my way to help others.
   b) work to acquire the social graces, i.e., activities approved by members of my group.
6. a) study for a test with others.
   b) do things with the gang just because I like them.
7. a) be an expert on the best restaurants, night clubs, etc.
   b) be an expert in an academic argument.
8. a) study hard in order to get good grades.
   b) help the academically poorer students.
9. a) be named the senior most likely to succeed.
   b) enjoy my friends' social accomplishments.
10. a) try to be seen frequently with impressive dates.
    b) study for a test with others.
11. a) drive a high-priced, good-looking car.
    b) volunteer my car to take people places even   it is out of my way.
12. a) support statements made in class discussions by other students.
    b) suppress activities and thoughts which I think may offend others.
13. a) make an effort to rationalize or avoid discussing a poor grade.
    b) give the impression that I have important connections.
14. a) know the academic standing of various departments and universities.
    b) minimize the differences in ability between myself and my classmates.
15. a) spend time with other people even to the point of inefficient use of time.
    b) make an effort to rationalize or avoid discussing a poor grade.
16. a) learn as many different dance steps as possible.

b) lend my notes to a friend to study for a test we're both taking.
17. a) take the blame for difficulties when it will help a friend.
    b) speak up as the voice of the group.
18. a) avoid expression of hostility in face-to-face situations.
    b) avoid discussing my good grades with other students.
19. a) drive a high-priced, good-looking car.
    b) be named the senior most likely to succeed.
20. a) sit near the front of the room.
    b) sit with friends in class.
21. a) suppress activities and thoughts which I think may offend others.
    b) compare my grades with the grades of other students.
22. a) give other students credit in class for the ideas which they have expressed.
    b) speak up as the voice of the group.
23. a) work for leadership roles.
    b) offer frequently to do things for people.
24. a) be patient with and tolerant of a friend's more objectionable characteristics.
    b) take a course with my best friend.
25. a) work hard on weekends and holidays.
    b) play the life of the party in social situations.
26. a) work to achieve membership in honorary academic societies.
    b) study for a test with others.
27. a) avoid making myself stand out in social groups.
    b) volunteer for oral reports in the classroom.
28. a) give the impression that I have important connections.
    b) sit with friends in class.
29. a) discuss and evaluate the social competence of others.
    b) avoid expression of hostility in face-to-face situations.
30. a) laugh frequently at others' jokes.
    b) play down my own high grades.
31. a) use an extensive and complex vocabulary.
    b) keep up with the latest slang.
32. a) work hard on weekends and holidays.
    b) work with others on class projects.
33. a) volunteer my car to take people places even if it is out of my way.
    b) bring in outside material to show to instructors.
34. a) accept a date for prestige—little personal interest.

b) agree with classmates' opinions of course and instructor.

35. a) get involved in campus political activities.
    b) avoid making myself stand out in social groups.

36. a) enjoy my friends' social accomplishments.
    b) sympathize with those who receive low grades.

37. a) try to be seen frequently with impressive dates.
    b) prepare assignments with a personal interest or involvement.

38. a) praise those who receive high grades.
    b) compare my grades with the grades of other students.

39. a) lend personal belongings of substantial value.
    b) read more on a subject than is required by the instructor.

40. a) be praised by the students for assisting them with academic problems.
    b) be a leader in my group.

41. a) avoid pressing people for money they owe me.
    b) go to important social functions which have prestige value.

42. a) help the academically poorer students.
    b) offer frequently to do things for people.

43. a) work to acquire the social graces, i.e., activities approved by members of my group.
    b) read more on a subject than is required by the instructor.

44. a) discuss my test results personally with an instructor.
    b) avoid discussing my good grades with other students.

45. a) Be an expert in academic arguments.
    b) compliment others on their dress and grooming.

46. a) Work for leadership roles.
    b) minimize the differences in ability between myself and my classmates.

47. a) learn as many different dance steps as possible.
    b) enjoy my friends' social accomplishments.

48. a) be named the senior best liked by my classmates.
    b) go out of my way to help others.

49. a) argue with the instructor about test items which I have missed.
    b) get involved in campus political activities.

50. a) start conversations about academic subjects outside of class.
    b) exchange comments with nearby students during class.

51. a) offer frequently to do things for people.

b) prepare assignments with a personal interest or involvement.

52. a) play the life of the party in social situations.
    b) avoid making myself stand out in academic situations.

53. a) laugh frequently at others' jokes.
    b) know the social ranking of social organizations on campus.

54. a) sit with friends in class.
    b) help get dates for my friends.

55. a) be well dressed on campus.
    b) study hard in order to get good grades.

56. a) make a conscious attempt not to appear too bright.
    b) bring in outside material to show to instructors.

57. a) know the academic standing of various departments and universities.
    b) openly express my appreciation for others.

58. a) drive a high-priced, good-looking car.
    b) be named the senior best liked by my classmates.

59. a) try to be seen frequently with impressive dates.
    b) do things with the gang just because I like them.

60. a) listen sympathetically to a friend's problems.
    b) work with others on class projects.

61. a) talk about my dates in dorms, etc.
    b) tell an instructor about related work I'm doing either in other courses or on my own.

62. a) give other students credit in class for the ideas which they have expressed.
    b) use an extensive and complex vocabulary.

63. a) work hard on weekends and holidays.
    b) avoid pressing people for money they owe me.

64. a) get involved in campus political activities.
    b) help the academically poorer students.

65. a) accept a date for prestige—little personal interest.
    b) lend personal belongings of substantial value.

66. a) change my opinions and behaviors to conform with those of friends.
    b) agree with classmates' opinions of course and instructor.

67. a) speak up as the voice of the group.
    b) compare my grades with the grades of other students.

68. a) volunteer for oral reports in the classroom.
    b) avoid making myself stand out in academic situations.

69. *a*) take the blame for difficulties when it will help a friend.
    b) sit near the front of the room.
70. *a*) support statements made in class discussions by other students.
    b) work to acquire the social graces, i.e., activities approved by members of my group.
71. *a*) try to get into plays, on radio, etc.
    b) listen sympathetically to a friend's problems.
72. *a*) praise those who receive high grades.
    b) compliment others on their dress and grooming.
73. *a*) know the academic standing of various departments and universities.
    b) know the social ranking of social organizations on campus.
74. *a*) prepare assignments with a personal interest or involvement.
    b) support statements made in class discussions by other students.
75. *a*) work to achieve membership in honorary academic societies.
    b) do things with the gang because I like them.
76. *a*) make a conscious attempt not to appear too bright.
    b) discuss and evaluate the social competence of others.
77. *a*) change my opinions and behaviors to conform with those of friends.
    b) give the impression that I have important connections.
78. *a*) give other students credit in class for the ideas which they have expressed.
    b) volunteer my car to take people places even if it is out of my way.
79. *a*) accept a date for prestige—little personal interest.
    b) sit near the front of the room.
80. *a*) make an effort to rationalize or avoid discussing a poor grade.
    b) play down my own high grades.
81. *a*) listen sympathetically to a friend's problems.
    b) discuss my test results personally with an instructor.
82. *a*) take a course with my best friend.
    b) know the social ranking of social organizations on campus.
83. *a*) be a leader in my group.
    b) suppress activities and thoughts which I think may offend others.
84. *a*) avoid making myself stand out in social groups.
    b) avoid making myself stand out in academic situations.
85. *a*) work for leadership roles.

86. *b*) work to achieve membership in honorary academic societies.
86. *a*) take a course where the instructor teaches on a very high level.
    b) take a course with my best friend.
87. *a*) start conversations about academic subjects outside of class.
    b) avoid turning down a proposed social invitation.
88. *a*) keep up with the latest slang.
    b) avoid discussing my good grades with other students.
89. *a*) attempt to get to know the student leaders on campus.
    b) be patient with and tolerant of a friend's more objectionable characteristics.
90. *a*) spend time with other people even to the point of inefficient use of time.
    b) exchange comments with nearby students during class.
91. *a*) be praised by the instructor for my ability in class.
    b) be a leader in my group.
92. *a*) be named the senior best liked by my classmates.
    b) be named the senior most likely to succeed.
93. *a*) go out of my way to help others.
    b) study hard in order to get good grades.
94. *a*) play down my own high grades.
    b) attempt to get to know the student leaders on campus.
95. *a*) compliment others on their dress and grooming.
    b) talk about my dates in dorms, etc.
96. *a*) take the blame for difficulties when it will help a friend.
    b) minimize the differences in ability between myself and my classmates.
97. *a*) bring in outside material to show to instructors.
    b) learn as many different dance steps as possible.
98. *a*) argue with the instructor about test items which I have missed.
    b) avoid raising my hand every time I know the answer to a question.
99. *a*) laugh frequently at others' jokes.
    b) use an extensive and complex vocabulary.
100. *a*) be well dressed on campus.
    b) praise those who receive high grades.
101. *a*) help my friends get dates.
    b) be an expert on the best restaurants, night clubs, etc.
102. *a*) avoid raising my hand every time I know the answer to a question.
    b) openly express my appreciation for others.

103. *a*) discuss and evaluate the social competence of others.
    b) start conversations about academic subjects outside of class.
104. *a*) read more on a subject than is required by the instructor.
    b) sympathize with those who receive low grades.
105. *a*) avoid expression of hostility in face-to-face situations.
    b) argue with the instructor about test items which I have missed.
106. *a*) go to important social functions which have prestige value.
    b) work with others on class projects.
107. *a*) keep up with the latest slang.
    b) openly express my appreciation for others.
108. *a*) lend personal belongings of substantial value.
    b) lend my notes to a friend to study for a test we're both taking.
109. *a*) discuss my test results personally with an instructor.
    b) attempt to get to know the student leaders on campus.
110. *a*) be an expert in an academic argument.
    b) agree with classmates' opinions about course and instructor.
111. *a*) tell the instructor about related work I'm doing either in other courses or on my own.
    b) change opinions and behaviors to conform with those of friends.

112. *a*) exchange comments with nearby students during class.
    b) talk about my dates in dorms, etc.
113. *a*) avoid turning down a proposed social invitation.
    b) be well dressed on campus.
114. *a*) make a conscious attempt not to appear too bright.
    b) avoid pressing people for money they owe me.
115. *a*) go to important social functions which have prestige value.
    b) take a course where the instructor teaches on a very high level.
116. *a*) tell the instructor about related work I'm doing either in other courses or on my own.
    b) lend my notes to a friend to study for a test we're both taking.
117. *a*) help get dates for my friends.
    b) be praised by the instructor for my ability in class.
118. *a*) avoid raising my hand every time I know the answer to a question.
    b) be an expert on the best restaurants, night clubs, etc.
119. *a*) play the life of the party in social situations.
    b) spend time with other people even to the point of inefficient use of time.
120. *a*) be praised by students for assisting them with academic problems.
    b) avoid turning down a proposed social invitation.